

VAN DE NIEUWELAAR et al. -- 10/665,351
Client/Matter: 081468-0305843

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) A lithographic projection apparatus, comprising:
 - a first substrate table configured to hold a first substrate;
 - a second substrate table configured to hold a second substrate;
 - a first station at which measurement of the first and second substrates may be performed;
 - a second station at which the first and second substrates may be exposed;
 - a displacement measuring system configured to measure displacements of the first and second substrate tables in the first and second stations;
 - a planar motor configured to independently transfer the first and second substrate tables between the first and the second stations;
 - a radiation system, associated with the second station, configured to provide a beam of radiation;
 - a support configured to support a patterning device, the patterning device configured to pattern the beam according to a desired pattern; and
 - a projection system configured to project the patterned beam onto a target portion of the first and second substrates when the first and second substrates are at the second station, respectively, wherein the displacement measuring system is configured to continuously measure displacements of the first and second substrate tables in at least two directions during transfer between the first and second stations.
2. (Cancelled)
3. (Previously presented) A lithographic projection apparatus according to claim 1, further comprising:
 - a first measurement system in the first station configured to measure first relative positions of the first and second substrates to the first and second substrate tables, respectively;

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a second measurement system in the second station configured to measure a second relative position of the patterning device relative to its support;
a storage device configured to store the first and second relative positions; and
a control unit configured to calculate an exposure position based on the first and second relative positions.

4. (Previously presented) A lithographic projection apparatus according to claim 3, wherein at least one of the first and second measuring systems is also an alignment system configured to align the first and second substrates in the first and second stations, respectively.

5. (Original) A lithographic projection apparatus according to claim 1, wherein the displacement measurement system comprises interferometers.

6. (Currently amended) A device manufacturing method, comprising:

locating a first substrate at least partially covered by a layer of radiation-sensitive material on a first substrate table in a first station, the first station being a station in which measurement of the first substrate may be conducted;

locating a second substrate at least partially covered by a layer of radiation-sensitive material on a second substrate table in a second station, the second station being a station in which the second substrate may be exposed;

measuring displacements of the first and second substrate tables in the first and second stations, respectively;

providing a beam of radiation using a radiation system;

using a patterning device to endow the beam with a pattern in its cross-section;

projecting the patterned beam of radiation onto a target portion of the layer of radiation-sensitive material while the second substrate is in an exposure position in the second station; and

transferring the second substrate table out of the second station and independently transferring the first substrate table from the first station to the second station using a planar motor;

continuously measuring displacements of the first substrate table during transferring.

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7. (Previously presented) A device manufacturing method according to claim 6, further comprising:
measuring and storing a first relative position of the first substrate to the first substrate table, while the first substrate table is in the first station;
8. (Original) A device manufacturing method according to claim 7, further comprising:
measuring and storing a second relative position of the patterning device relative to a support.
9. (Original) A device manufacturing method according to claim 8, further comprising:
calculating an exposure position using the stored first and second relative locations;
and
using the exposure position as a destination during the transferring.
10. (Original) A computer program comprising a program code that, when executed on a control unit configured to control a lithographic projection apparatus, instructs the lithographic projection apparatus to perform the method of claim 6.
11. (Original) A computer program comprising a program code that, when executed on a control unit configured to control a lithographic projection apparatus, instructs the lithographic projection apparatus to perform the method of claim 7.
12. (Original) A computer program comprising a program code that, when executed on a control unit configured to control a lithographic projection apparatus, instructs the lithographic projection apparatus to perform the method of claim 8.
13. (Original) A computer program comprising a program code that, when executed on a control unit configured to control a lithographic projection apparatus, instructs the lithographic projection apparatus to perform the method of claim 9.
- 14-17. (Cancelled)

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18. (New) A lithographic projection apparatus according to claim 1, wherein the displacement measurement system comprises a first interferometer associated with the first station configured to measure displacements of a substrate table in the first station in a first direction, a second interferometer associated with the second station configured to measure displacements of a substrate table in the second station in the first direction, and a third interferometer between the first and second stations and configured to measure displacements of a substrate table between the first and second stations in the first direction.

19. (New) A device manufacturing method according to claim 6, wherein measuring displacements of the first and second substrate tables in the first and second stations is performed by first and second interferometers associated with the first and second stations, respectively, and continuously measuring displacements of the first substrate table during transferring comprises measuring displacements of the first substrate table at a position intermediate the first and second stations by a third interferometer intermediate the first and second stations.

20. (New) A lithographic projection apparatus according to claim 1, wherein the transfer of the first and second substrate tables between the first and second stations comprises a curved path.

21. (New) A device manufacturing method according to claim 6, wherein transferring the second substrate table out of the second station and independently transferring the first substrate table from the first station to the second station comprises transferring the first and second substrate tables in a curved path.

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